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25 JAN 1967

P 250020Z
FM NPIC
TO AFSSO FTD
INFO DIA PROD CEN

1967 JAN 25 00 59Z

25X1

AFSSO USAF
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ZEM
T O P S E C R E T [redacted] CITE NPIC 9682. 25X1

FTD FOR TDFBD [redacted] 25X1

1. REFERENCE DIAST-3 0045-67 DTG 201540Z JAN 67 FROM SSO DIA PROD CEN AND FTD [redacted] (DTG 172100Z JAN 67) - NOTAL REGARDING THE REQUEST FOR ASSISTANCE ON THE CONFIGURATION OF THE PROBABLE LONG RANGE SAM MISSILE AND ASSOCIATED RADAR. 25X1

2. THE TRACKING/GUIDANCE RADAR ASSOCIATED WITH THE PROBABLE LONG RANGE SAM SYSTEM IS CURRENTLY UNDERGOING INTENSIVE PHOTO ANALYSIS WHICH IS NOW IN ITS TERMINAL PHASE. A DETAILED REPORT WILL BE PUBLISHED IN THE VERY NEAR FUTURE. A BRIEF SUMMARY FOLLOWS:

A. AS INTERPRETED FROM KEYHOLE PHOTOGRAPHY, THE RADAR IS BELIEVED TO CONSIST OF A NON-SYMMETRICAL ARRANGEMENT OF MULTIPLE COMPONENTS WHICH INCLUDE THE FOLLOWING:

(1) A LARGE PROBABLE REFLECTOR MOUNTED TO THE RIGHT AND A SMALLER PROBABLE REFLECTOR MOUNTED TO THE LEFT OF A BULKY PROBABLE FEED STRUCTURE;

(2) AN UNIDENTIFIED ELEMENT END-MOUNTED ON THE PROBABLE FEED STRUCTURE;

(3) AN UNIDENTIFIED ELEMENT ATTACHED OUTBOARD OF AND BELOW THE LEFT REFLECTOR BY MEANS OF STRUTS OR BRACES: [redacted] 25X1

TOP SECRET

(4) [redacted]EAR HOUSING.

B. THE HIGHEST PART OF THE RADAR, WHICH IS THE TOP OF THE RIGHT PROBABLE REFLECTOR, IS APPROXIMATELY 30 FEET ABOVE THE MOUND OR HARDSTAND UPON WHICH THE RADAR IS POSITIONED. THE RADAR'S OVERALL SPAN IS APPROXIMATELY 30 FEET FROM THE OUTER EDGE OF THE RIGHT PROBABLE REFLECTOR TO THE OUTER EDGE OF THE LEFT REFLECTOR AND THE APPROXIMATE DISTANCE FROM THE FRONT OF THE PROBABLE FEED STRUCTURE TO THE BACK OF THE REAR HOUSING [redacted] THE PROBABLE FEED STRUCTURE IS POSITIONED ABOUT 1/3 (ONE THIRD) OF THE DISTANCE FROM THE LEFT END OF THE RADAR. BOTH THE RIGHT AND LEFT REFLECTORS ARE PROBABLY CURVED IN THE HORIZONTAL AND VERTICAL PLANES ALTHOUGH THE AMOUNT OF CURVATURE CAN NOT BE DETERMINED. 25X1

3. AS REGARDS THE MISSILES SEEN AT SARY-SHAGAN, ATTENTION IS INVITED TO NPIC PIR [redacted] DTD OCTOBER 1965, AND THE VARIOUS OAK REPORTS. CONTINUING ANALYSIS OF THE VARIOUS MISSILES IMAGED ON THE LARGER SCALE MISSIONS HAS NOT RESULTED IN ANY CHANGES TO THE ESTIMATE OF POSSIBILITIES SUGGESTED FOR CONSIDERATION ON PAGE 2 OF THE REFERENCED NPIC PIR, AND IN THE HIGHLIGHTS OF NPIC OAK 3, MISSION [redacted] HOWEVER, ADDITIONAL INFORMATION IS SUBMITTED FOR CONSIDERATION DURING FURTHER ANALYSIS OF THE PROBABLE LONG RANGE SAM SYSTEM. 25X1 25X1

4. GENERALLY, THERE IS NO STRAIGHTFORWARD CONVERGENCE OF EVIDENCE REGARDING MISSILE CONFIGURATIONS. CERTAIN FEATURES ARE RELATIVELY PROMINENT WITH A MISSILE AT A GIVEN LOCATION BUT NOT CONSISTENTLY ON ALL MISSIONS. THE EVIDENCE INDICATES THAT, IF TWO DIFFERENT MISSILES ARE PRESENT, THEY HAVE APPEARED BOTH AT THE R

AND D FACILITY (LAUNCH SITE 3) AND AT NEARBY PROBABLE LONG RANGE SAM LAUNCH COMPLEX 2, SSATC. THE FOLLOWING, PREVIOUSLY UNREPORTED FEATURES APPEAR AT BOTH LAUNCH COMPLEXES:

A. A SEPARATION EXISTS BETWEEN THE LAUNCHER RAIL AND THE SUSTAINER PORTION OF THE MISSILE, AS SEEN ON AT LEAST 4 OCCASIONS, AT THREE DIFFERENT LAUNCH SITES WHEN THE SUN ANGLE WAS IDEAL FOR SHADOW ANALYSIS. NOTE THE FOLLOWING:

25X1

B. A CONNECTION (POSSIBLE SUPPORT BRACE) EXTENDS FROM THE END OF THE LAUNCHER RAIL TO THE MISSILE SUSTAINER IN THE FIRST THREE OF THE ABOVE LISTED EXAMPLES.

C. SHADOWS OF UNOCCUPIED LAUNCHERS SUGGEST THAT THE AFT PORTION OF THE LAUNCHER RAIL IS SLIGHTLY HIGHER THAN THE FORWARD SECTION. THIS CAN ALSO BE SEEN ON THE TARPAULIN COVERED POSSIBLE LAUNCHERS WHICH WERE PHOTOGRAPHED IN THE ENTUZIASTOV RAILROAD YARDS IN MOSCOW ON

25X1

CIA/PIR-71010, DTD OCTOBER 1966). THE PROBABLY ARTICULATED EXTENSION REFERRED TO AS A POSSIBLE BLAST DEFLECTOR APPEARS IN AN UP POSITION AT SARY SHAGAN LAUNCH POSITIONS (AND AT DEPLOYED LAUNCH SITES), HOWEVER, IT IS QUITE DIFFERENT FROM AN SA-2 BLAST DEFLECTOR, IF IT IN FACT SERVES SUCH A FUNCTION.

5. ONE OR MORE OF THE PROBABLE MOCK UP MISSILES NORTH OF POSI-

TION 3, SITE 3 HAS ON AT LEAST TWO OCCASIONS GIVEN A DISTINCT IMPRESSION OF DELTA LIKE EXTENSIONS ALONG THE AFT SECTION OF THE MISSILE (SEE FIGURE 3, NPIC REPORT [redacted], HOWEVER, ON THE OTHER MISSIONS OF GENERALLY COMPARABLE QUALITY, THE EXTENSIONS CAN NOT BE IDENTIFIED, THOUGH THE AFT END HAS ALWAYS APPEARED MARKEDLY THICKER THAN THE FORWARD OR SUSTAINER SECTION. [redacted] 25X1 25X1

[redacted] REVEALS THESE TWO PROBABLE MOCK UP MISSILES NOW APPEAR TO BE OF THE SAME LENGTH, WITH ONE AGAIN GIVING AN IMPRESSION OF A DELTA LIKE EXTENSION. THE APPEARANCE OF A SIMILAR DELTA LIKE EXTENSION ON MISSILES AT LAUNCH SITES HAS NOT BEEN AS CLEAR, NEVERTHELESS, THERE IS AN INDICATION OF SUCH A CONFIGURATION IN THE FOLLOWING INSTANCES: 25X1

A. [redacted] PARTIALLY ERECTED ON LAUNCHER AT LAUNCH POSITION 6 LAUNCH SITE 3, COMPLEX A, WHERE THE SHADOW WAS THE ONLY EVIDENCE SUGGESTING THIS SHAPE. 25X1

B. [redacted] ON THE RIGHT MISSILE DOLLY AT LAUNCH POSITION 2 LAUNCH SITE A, COMPLEX 2, WHERE THE AFT END OF THE [redacted] MISSILE HAS A DELTA LIKE EXTENSION, VISIBLE ONLY ON ONE OF THE TWO PHOTOGRAPHIC FRAMES. BOOSTERS, WHETHER CLUSTERED OR STRAPPED ON, CAN NOT BE IDENTIFIED, THOUGH THEIR PRESENCE CAN NOT BE NEGATED. 25X1 25X1

C. [redacted] ON THE LEFT MISSILE DOLLY AT LAUNCH POSITION 6, LAUNCH SITE 3, COMPLEX A, WHERE A [redacted] MISSILE HAD AN INDICATION OF FIN LIKE STRUCTURES NEAR THE AFT END OF THE MISSILE. LACK OF SHADOW CONFIRMATION AND MONOSCOPIC COVERAGE 25X1 25X1

PRECLUDE A MORE DEFINITE STATEMENT.

6. ON PHOTOGRAPHY OF GENEALLY SIMILAR INTERPRETABILITY, MISSILES HAVE BEEN OBSERVED WITH NO INDICATION OF FINS OR DELTA LIKE EXTENSIONS, AND ON THE CONTRARY, HAVE ON ONE OCCASION APPEARED AS SHOWN IN FIGURE 1, OF NPIC [redacted] INSTANCES OF GENERALLY SIMILAR MISSILES ARE: 25X1

A. [redacted] ON THE LAUNCHER AT LAUNCH POSITION 6, LAUNCH SITE B, COMPLEX 2, WHERE A 33.5 FOOT MISSILE HAD A CONFIGURATION WHICH SUGGESTS EITHER STRAP-ON OR CLUSTERED BOOSTERS. A CANARD CAN NOT BE SEEN OR NEGATED. 25X1

B. [redacted] ON THE LAUNCHER AT LAUNCH POSITION 6, LAUNCH SITE 3, COMPLEX A, WHERE A 35 FOOT LONG MISSILE HAD A GENERALLY SIMILAR SHAPE, THOUGH INDIVIDUAL BOOSTER ELEMENTS COULD NOT BE DETECTED AS THEY WERE ON [redacted] A POSSIBLE CANARD CONFIGURATION COULD BE DETECTED IN THIS INSTANCE. 25X1

C. [redacted] ON THE LAUNCHER AT LAUNCH POSITION 1, LAUNCH SITE A, COMPLEX 2, WHERE A MISSILE (APPROXIMATELY 30 FEET LONG, IF HORIZONTAL) HAD A GENEALLY SIMILAR SHAPE TO THOSE DESCRIBED IN PARA 7A AND 7B ABOVE, HOWEVER, A CANARD WAS NOT DETECTED AND THE SHADOW CONFIGURATION WAS IN CONFLICT WITH THE APPARENT SHAPE OF THE MISSILE ITSELF. THE ANGLE OF THE SUN WITH REFERENCE TO THE LONGITUDINAL AXIS OF THE MISSILE WOULD TEND TO CREATE SOME DISTORTION, HOWEVER, IMAGE QUALITY AND UNKNOWN SLOPE OF THE GROUND ON WHICH THE SHADOW FALLS DOES NOT PERMIT FIRM CONCLUSIONS REGARDING THIS SHADOW. 25X1

7. VARIATIONS IN LENGTH MUST BE CONSIDERED IN THE LIGHT OF MENSURAL CONFIDENCE FACTORS AND THE DIFFICULTY OF POINTING WITH ACCURACY.

GP-1

T O P S E C R E T

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-END OF MESSAGE-